

> d his

(FILE 'HOME' ENTERED AT 11:54:24 ON 30 SEP 2004)

FILE 'INSPEC' ENTERED AT 11:54:39 ON 30 SEP 2004

L1 0 DEVIAT##### AND CLAIBRAT#####  
L2 76368 CALIBRAT#####  
L3 234885 DEPOSIT#####  
L4 16946 MOCVD OR METALOORGANIC OR METAL(A) ORGANIC  
L5 8081 PROCESS(A) PARAMETER#  
L6 1 L2 AND L3 AND L4 AND L5

FILE 'CA' ENTERED AT 11:59:28 ON 30 SEP 2004

L7 1 L6

FILE 'STNGUIDE' ENTERED AT 12:00:00 ON 30 SEP 2004

FILE 'INSPEC' ENTERED AT 12:00:52 ON 30 SEP 2004

FILE 'CA' ENTERED AT 12:01:03 ON 30 SEP 2004

L8 199282 DEVIAT#####  
L9 1 L5 AND L3 AND L2 AND L8  
L10 1 FD HIS  
L11 240 L2 AND L3 AND L8  
L12 1 L11 AND L4  
L13 1297201 LAYER# OR FIM#  
L14 23 L11 AND L13

=>

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NEWS 3 Jul 12 BEILSTEIN enhanced with new display and select options,  
resulting in a closer connection to BABS  
NEWS 4 AUG 02 IFIPAT/IFIUDB/IFICDB reloaded with new search and display  
fields  
NEWS 5 AUG 02 CAPLUS and CA patent records enhanced with European and Japan  
Patent Office Classifications  
NEWS 6 AUG 02 The Analysis Edition of STN Express with Discover!  
(Version 7.01 for Windows) now available  
NEWS 7 AUG 27 BIOCOMMERCE: Changes and enhancements to content coverage  
NEWS 8 AUG 27 BIOTECHABS/BIOTECHDS: Two new display fields added for legal  
status data from INPADOC  
NEWS 9 SEP 01 INPADOC: New family current-awareness alert (SDI) available  
NEWS 10 SEP 01 New pricing for the Save Answers for SciFinder Wizard within  
STN Express with Discover!  
NEWS 11 SEP 01 New display format, HITSTR, available in WPIDS/WPINDEX/WPIX  
NEWS 12 SEP 14 STN Patent Forum to be held October 13, 2004, in Iselin, NJ  
NEWS 13 SEP 27 STANDARDS will no longer be available on STN  
NEWS 14 SEP 27 SWETSCAN will no longer be available on STN  
  
NEWS EXPRESS JULY 30 CURRENT WINDOWS VERSION IS V7.01, CURRENT  
MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),  
AND CURRENT DISCOVER FILE IS DATED 11 AUGUST 2004  
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=> le inspec

THIS COMMAND NOT AVAILABLE IN THE CURRENT FILE

Some commands only work in certain files. For example, the EXPAND  
command can only be used to look at the index in a file which has an  
index. Enter "HELP COMMANDS" at an arrow prompt (=>) for a list of

Editor(s): Yoshikawa, A.; Kishino, K.; Kobayashi, M.; Yasuda, T.  
Tokyo, Japan: Ohmsha, 1996. p.375-8 of xviii+580 pp. 7 refs. Availability:  
IOS Press, Van Diemenstraat 94, 1013 CN Amsterdam, Netherlands  
Conference: Chiba, Japan, 5-7 March 1996  
ISBN: 4-274-90096-7

DT Conference Article

TC Experimental

CY Japan

LA English

AB Contrary to conventional III-V MOCVD, during growth of III-nitride heterostructures for LEDs and lasers, a variety of **process parameters** must be varied. It is required that the reactor boundary conditions remain favorable and well controlled. This is not the case in most MOCVD reactors reported in the literature. Here, a novel approach is reported which was derived from the UHB-LED mass production Planetary Reactor AIX 2400. To obtain stable thermodynamic boundary conditions in the AIX 2000/2400 HT GaN reactor, the temperature of the quartz ceiling plate was made adjustable and controllable and could be held absolutely constant while wafer temperatures are varied in a very controlled manner to grow the various III-nitride layers. A temperature was chosen at which no growth and minimized **deposition** on the quartz ceiling takes place. Under these circumstances it was possible to go ahead with noncontact temperature measurement. A new cooled slit window was introduced and a pyrometer mounted on top of the reactor. The temperature profile of the susceptor and the wafer are monitored. The various temperature profiles at different absolute temperatures are characterized and for given growth temperatures the profiles were optimized ( $\pm 2$  degrees C across the 2" wafer). The rotation speed of the planetary and satellite discs at different temperatures could also be monitored. All temperature monitoring was **calibrated** at high temperatures using the melting point of silicon.

CC A8115H Chemical vapour deposition; A4255P Lasing action in semiconductors; A0720D Thermometry; A0720K High-temperature techniques and instrumentation; pyrometry; A8115G Vacuum deposition; B0510D Epitaxial growth; B4260D Light emitting diodes; B4320J Semiconductor lasers; B7320R Thermal variables measurement

CT III-V SEMICONDUCTORS; LIGHT EMITTING DIODES; MONITORING; PYROMETERS; SEMICONDUCTOR EPITAXIAL LAYERS; SEMICONDUCTOR GROWTH; SEMICONDUCTOR HETEROJUNCTIONS; SEMICONDUCTOR LASERS; TEMPERATURE MEASUREMENT; VAPOUR PHASE EPITAXIAL GROWTH

ST in-situ monitoring; **process parameters**; boundary conditions; **III-nitride MOCVD**; III-nitride heterostructures; LEDs; lasers; reactor boundary conditions; **MOCVD reactors**; UHB-LED mass production Planetary Reactor; AIX 2400 reactor; stable thermodynamic boundary conditions; IX 2000/2400 HT GaN reactor; quartz ceiling plate; wafer temperatures; III-nitride layers; **minimized deposition**; noncontact temperature measurement; cooled slit window; pyrometer; temperature profile; susceptor; temperature profiles; absolute temperatures; growth temperatures; satellite discs; planetary discs; temperature monitoring; melting point; Si

ET In; V; Ga\*N; GaN; Ga cp; cp; N cp; C; Si

commands which can be used in this file.

=> file inspec  
COST IN U.S. DOLLARS

SINCE FILE	TOTAL
ENTRY	SESSION
0.21	0.21

FULL ESTIMATED COST

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FILE LAST UPDATED: 27 SEP 2004 <20040927/UP>  
FILE COVERS 1969 TO DATE.

<<< SIMULTANEOUS LEFT AND RIGHT TRUNCATION AVAILABLE IN  
THE BASIC INDEX >>>

=> deviat##### and claibrat#####  
89362 DEVIAT#####  
1 CLAIBRAT#####  
L1 0 DEVIAT##### AND CLAIBRAT#####

=> calibrat#####  
L2 76368 CALIBRAT#####

=> deposit#####  
L3 234885 DEPOSIT#####

=> mocvd or metaloorganic or metal(a) organic  
13877 MOCVD  
3 METALOOORGANIC  
280775 METAL  
255866 ORGANIC  
6492 METAL(A) ORGANIC  
L4 16946 MOCVD OR METALOOORGANIC OR METAL(A) ORGANIC

=> process(a)parameter#  
701851 PROCESS  
794454 PARAMETER#  
L5 8081 PROCESS(A) PARAMETER#

=> d his

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L5 8081 PROCESS(A) PARAMETER#

=> 12 and 13 and 14 and 15  
L6 1 L2 AND L3 AND L4 AND L5

=> d 16 1 all

L6 ANSWER 1 OF 1 INSPEC (C) 2004 IEE on STN  
AN 1998:5958627 INSPEC DN A9815-8115H-090; B9808-0510D-126  
TI In-situ monitoring of **process parameters** and boundary  
conditions during III-nitride **MOCVD**.  
AU Strauch, G.; Hergeth, J.; Wachtendorf, B.; Volk, M.; Woelk, E. (AIXTRON,  
Aachen, Germany)  
SO Blue Laser and Light Emitting Diodes

L14 ANSWER 3 OF 23 CA COPYRIGHT 2004 ACS on STN  
 AN 137:391338 CA  
 ED Entered STN: 19 Dec 2002  
 TI Metalorganic chemical vapor **deposition** method and apparatus  
 IN Heuken, Michael  
 PA Aixtron A.-G., Germany  
 SO PCT Int. Appl., 29 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA German  
 IC ICM C23C016-52  
 ICS C30B025-16  
 CC 75-1 (Crystallography and Liquid Crystals)  
 Section cross-reference(s): 47

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002092876	A1	20021121	WO 2002-EP4407	20020422
	W:				
	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW:				
	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	DE 10124609	A1	20021121	DE 2001-10124609	20010517
	EP 1390561	A1	20040225	EP 2002-730186	20020422
	R:				
	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	US 2004152219	A1	20040805	US 2003-715282	20031117
PRAI	DE 2001-10124609	A	20010517		
	WO 2002-EP4407	W	20020422		

# CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2002092876	ICM	C23C016-52
	ICS	C30B025-16

AB The invention relates to a device comprising a process chamber which is arranged in a reaction housing and which can be heated especially by supplying heat to a substrate holder. The apparatus comprises a gas inlet for the admission of gaseous starting material, whereby the decomposition products thereof are **deposited** on a substrate maintained by a substrate holder to form a **layer**; at least one sensor acting upon the inside of the process chamber for determining **layer** properties; an electronic control unit for controlling the heating of the process chamber; mass controllers for controlling the flow of the starting materials; and a pump for controlling the pressure of the process chamber. The electronic control unit forms modified process parameters from **deviation** values obtained upon growth of the **calibrating layer** with the aid of stored **calibrating** parameters, thereby controlling the heating of the process chamber, the flow controllers, and the pump during growth of the active **layer** sequence.

ST chem vapor **deposition** process app

IT Pyrometers

(IR; metalorg. chemical vapor **deposition** method and apparatus)

IT Control apparatus

Process control

Vapor **deposition** apparatus

(metalorg. chemical vapor **deposition** method and apparatus)

IT , Vapor **deposition** process

(metalorg.; metalorg. chemical vapor **deposition** method and apparatus)

RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Bell Communications Res; WO 9120093 A 1991
- (2) Kanaya, K; US 6217651 B1 2001 CA
- (3) Nishizawa, J; EP 0545238 A 1993 CA
- (4) On Line Techn Inc; WO 9915710 A 1999 CA
- (5) Secr Defence Brit; WO 8705700 A 1987 CA
- (6) Sony Corp; EP 0233610 A 1987 CA
- (7) Zettler, J; PROGRESS IN CRYSTAL GROWTH AND CHARACTERIZATION OF MATERIALS  
1997, V35(1), P27 CA

L14 ANSWER 4 OF 23 CA COPYRIGHT 2004 ACS on STN